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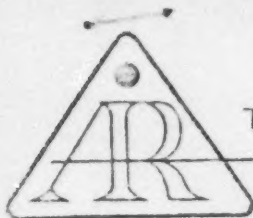
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ABSTRACT

Student and faculty attitudes about faculty evaluation and the relationship of the attitudes to the concept of locus of control were investigated. Student respondents consisted of 172 males and 256 females, and 108 faculty responses were received. The measure of locus of control closely resembles the Rotter Internal-External Control Scale. Student and faculty questionnaires were developed to obtain demographic data and determine attitudes. The relationship between locus of control and attitudes toward faculty was investigated through the factor analytic technique of image analysis, but no strong relationship was found. The internal-external scale did appear to yield psychometric values similar to those reported in the literature. The questionnaire items designed to measure faculty attitudes did not focus on the areas where a locus of control difference would manifest itself. Questionnaire items on which faculty and students showed the greatest disagreement are discussed. (SW)

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PERCEPTION OF LOCUS OF CONTROL AS A
PREDICTOR OF ATTITUDE TOWARD STUDENTS' EVALUATION
OF UNIVERSITY FACULTY

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At Mississippi State University the Office of Institutional Research has been active in the evaluation of teachers by students for many years. We call this activity Faculty Evaluation, and this term will be used throughout the remainder of this paper. Institutional Research has the responsibility to conduct faculty evaluation, in accord with the wishes of a Student/Faculty Evaluation Committee.

Over the past ten or so years, we have gone from in-house forms to *Student Instructional Report* (SIR), produced by the Educational Testing Service; from there to the *IDEA* system, marketed by the Kansas State University group, and now it appears we will be going back to an in-house form. Regardless of the form used or the procedures followed, there have been plenty of comments about the deficiencies but few about the strengths of faculty evaluation. Even though faculty evaluation was and is a "hot" issue on our campus, no one has systematically gathered data about the attitudes held by faculty and students toward it. A rather cursory review of the literature failed to produce studies which attempted to measure attitudes toward faculty evaluation or studies which related such attitudes to any larger body of psychological theory.

Broadly speaking, the purpose of this study was two-fold: first and primarily, we wanted to measure the attitudes held toward faculty evaluation in general and, secondly, to relate such attitudes to the concept of locus of control (Phares, 1976; Lefcourt, 1976; Rotter and Mulry, 1965). We specifically sought answers to four questions. First, what is the relationship between locus of control and attitudes held toward faculty evaluation? A second parallel question asks if internals viewed faculty evaluation differently from externals, as measured by The Rotter Internal-External Control Scale (Rotter, 1966). The third question asked what opinions about faculty evaluation are held by students and faculty? The fourth question asks are there important differences between student and faculty opinions about faculty evaluation?

METHOD

Subjects: One hundred seventy-two males and 256 female students made up the 428 subjects. Of these, 97.2% were between eighteen and thirty years of age. Eighteen point nine percent were freshmen, 28.5% sophomores, 33.2% juniors, and 17.5% seniors. The remaining 1.6% were graduate students. The student subjects were distributed proportionately over the several schools and colleges. Due both to a lack of resources and an inability to contact a random sample, the student sample represents the willingness of some faculty to permit us to survey their classes. Two hundred three students took both questionnaires described below. There were no reasons to believe this sample differed materially from the undergraduate population.

The faculty sample of 143 professors was a simple random sample drawn from our personnel file. One hundred eight (or approximately 76%) returned the completed questionnaires. The group returning the questionnaires did not markedly differ from the faculty population in regard to sex, tenure status, years of teaching, and college or school assignments.

Instruments: The measure of locus of control closely resembles the Rotter Internal-External Control Scale (I-E Scale) (Rotter, 1966). The I-E Scale is comprised of 29 items, six of which are unscored filler items. The remaining 23 are made up of two statements. The subject is asked to select one of the pair which best reflects what he most strongly believes to be true. One point is given for each external statement selected. An example item is

- ☐ a. The idea that teachers are unfair to students is nonsense.
- ☐ b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

The statement b is the more external of the pair.

The average I-E Score was 10.68 with a standard deviation of 4.12. The reliability of the scale was 0.72 (alpha coefficient). These psychometric properties are similar to those reported by Lefcourt (1976).

Both the student and faculty forms of the second questionnaire were developed. The two differed in the type of demographic questions asked and in the wording, which was designed to reflect either a student's or a professor's orientation. The attitudinal questions were four-choice Likert-type in form. The final form reflected the table of specifications that was used as a guide. This table has six content dimensions. They were Purpose, Scope, Form, Interpretation, Administration, Dissemination in Reporting. There were two domains: Affective and Factual. Where possible, the items were worded to mimic the locus of control items in the I-E Scale. An example item:

Publishing evaluations is a major force in making professors change their teaching methods.

The psychometric properties were derived from the attitudinal items only. These properties are as follows: the student mean was 79.3, and 55.7 for the faculty. Standard deviation for student scores was 9.2, and for the faculty it was 13.8. Coefficient alpha reliability estimates were 0.65 for the student measure and 0.76 for the faculty. There were 32 items on the student form and 24 on the faculty.

Procedure: Several professors were asked if they would permit us to survey one or more of their large lecture classes. The professors were told of the purpose of the evaluation. Four hundred twenty-eight students were administered the student version of the questionnaire. Two hundred three of these were also administered the I-E Scale. Both were given during classtime. The students were briefly told why we needed their responses, and they were assured their responses would remain anonymous. Any student could refuse to participate without impunity. Where it was necessary to collate, by student, the I-E Scale and faculty evaluation questionnaire responses, a random three-digit number was precoded on the answer sheets, and the two questionnaires were distributed at the same time to each student.

The responses were recorded on an optically-scanned separate answer sheet. These answer sheets were processed on an IBM 1230/534 systems. The cards produced were subsequently analyzed on a UNIVAC 1108.

Psychometric analyses of the questionnaire and its items was through the application of the MSU Evaluation Services' Test Analysis software. This software, although extensively modified, is similar to the software sub-routine described in Veldman's 1967 "Testat," "Distat," and "Factor" routines. Cross-tabulation and portions of the other analysis utilized the SPSS software (Nie, 2nd edition, *et al.*, 1970).

The procedure followed for the faculty was as follows: a questionnaire, the directions, an answer sheet, and a number two pencil were sent to each faculty member, along with a short cover letter explaining the reasons for the study. The campus mail was used to distribute these materials and for the return of the completed questionnaires. The procedures followed for the handling of the faculty questionnaires and data analyses were identical to those described above for the student data. The exception was there were no I-E data for the faculty sample.

RESULTS

The answer to the first question as to the relationship between locus of control and attitudes toward faculty was sought through factor analysis. Specifically, image analysis (Guttman, 1953) was selected. This approach utilizes the squared multiple correlation of each variable with the other I-1 variables as an estimate of an items communality. The image analysis is particularly appealing because we chose to analyze items. We were relatively certain several items existed for each potential factor. This overdetermination is necessary in image analysis. In choosing the image factor model, we also accepted the assumption that a variable can be decomposed into two parts: one due to common factors and the other, a unique part, unassociated with the other variables.

The 23-item I-E Scale and the 32-item faculty evaluation attitude questionnaire were combined to create a 55-item super-test. We hoped to have had 400+ subjects take both instruments, but, unfortunately, we could only get 203 complete sets of data. Needless to say, this was a relatively small sample with which to be conducting item analyses.

The image analysis produced six factors with eigenvalues greater than one. These six were retained and rotated to the varimax criteria described by Kaiser. The first factor was clearly a locus of control factor, with thirteen of the 23 items having loadings greater than 0.35. There were no faculty evaluation items loading on the first factor. The second factor was clearly a faculty evaluation attitude factor, with twelve of 32 items having loadings greater than 0.35 on it. Here again, there were no I-E items loading on this second factor. The third factor was a weak I-E factor. The fourth and fifth were weak faculty evaluation factors, and the sixth was a weak I-E factor. In no case was a factor described by both I-E and faculty evaluation items with loadings of 0.35 or greater. The two sets of items could hardly have been less related factorially.

The following analytic procedure was used in seeking the answer to the second question. The student sample was divided at the median into Externals (high I-E scores) and Internals (low I-E scores). Chi square analyses were computed for each attitudinal question contained in the faculty evaluation questionnaire. There were no significant differences displayed between the two student groups ($\alpha \leq 0.05$). However, questions #13 ($\alpha = 0.058$) and #22 ($\alpha = 0.056$) approached significance.

The third question's answer was sought through simple tabulation of the frequency each response was chosen and by computing the means and standard deviations associated with each item. Both student and faculty data were treated in an identical manner.

The analysis associated with the fourth question was chi square, followed by rank ordering of the mean responses for both faculty and students. Rho was calculated for the ranking of the item means for these items associated with the non-significant chi square values. This step was repeated for the seventeen items with significant chi square values.

Table 1 displays the results associated with the five questions where non-significant chi square values ($\alpha \leq 0.05$) were obtained when the student and faculty response distributions were compared.

INSERT TABLE 1 HERE.

Table 2 displays the same information for those items where significant chi square values were found.

INSERT TABLE 2 HERE.

After the above analyses were completed, there were still seventeen items with significant chi square values. This indicated that the faculty and student samples distributed their responses differently over the variable options.

The next step was to further reduce these data if possible. The simple t-test was chosen. This analysis proceeded from greatest absolute mean difference to least. The t-testing stopped with the largest non-significant value. This was approximately a difference of $|0.08|$.

After this step there still remained thirteen items with a significant difference between faculty and student mean items responses. It is well known that trivial mean differences can be statistically significant because of large sample sizes. With 108 faculty and 428 students, this qualifies as a large sample study. Hays (1963) offers a way around this problem of large sample size through the application of the estimated ω^2 test. Briefly, ω^2 estimates the strength of a statistical relationship between group status and the dependent variable. Omega squared values range from 0.00 to 1.00. It is analogous to interpreting r^2 rather than r in correlation studies.

The final analysis left us with five items which displayed significant χ^2 values, significant mean differences, and where the statistical association was equal to 0.10 or greater. These were items #7, #13, #14, #15, and #20. These items are noted with an asterisk on Table 3.

INSERT TABLE 3 HERE.

DISCUSSION

What was learned from all this? The lack of a strong relationship between locus of control and attitudes toward faculty evaluation was disappointing. This is particularly true since we explicitly stated the faculty evaluation attitude items in wording similar to that found in the I-E Scale. There are several reasons for this lack of relationship. One could be that the two are in fact not related. The factor analytic results provide a compelling argument for the statement of no relationship.

The I-E Scale appears to yield psychometric values similar to those reported in the literature. Although circumstantial in nature, this is evidence in support of the position that we have a good locus of control measure.

The most probable areas where data quality is suspect is in the questionnaire to measure faculty evaluation attitudes. The items probably did not focus on those areas where a locus of control difference would manifest itself in evaluation item responses. Without doubt a more sophisticated item-writing procedure with concomitant trials should be used.

The research questions, on hindsight, were developed from a rather naive psychology. However, the literature is rather clear that the concept of locus of control is a situation specific concept. If the students did in fact believe they had little individual control over the phenomenon of faculty evaluation, we would have predicted no relationship between the I-E Scale scores and attitudes toward faculty evaluation. Unfortunately, we did not ask this crucial question. While I am wearing this "hair shirt," I must mention one other problem. Factor analyzing problems is a trying, fruitless, and frustrating procedure. I know better, based on the psychometric literature and my own personal experience, yet I did it anyway. My advice to you is *don't do it*.

The answer to the second research question, which asked if internals response distributions differ from externals, was anticipated from the factor analytic results. No significant χ^2 values were found when the two distributions were compared. At first, I had an inclination to remark about those items which had "almost" significant χ^2 values. I will resist this and move on to the remaining points.

As is true with most institutional research, this study was done to yield information to help guide our efforts to improve faculty evaluation by increasing our efficiency and by being responsive to wishes of our colleagues and students.

The strength of opinion held about faculty evaluation is shown in Tables 1 and 2. These will be given to a Faculty/Student Committee on faculty evaluation. The items which have the most extreme value, either high or low, should be addressed first. The more moderately held opinions can be dismissed . . . with some discretion, of course.

For brevity I will confine my discussion to those additudinal items which have means greater than or equal to 3.00 and means less than or equal to 2.00 for either faculty or students. These are displayed in Table 4.

INSERT TABLE 4 HERE.

The item statements are, for the most part, explicit guides to follow in developing a faculty evaluation program.

What are the important differences of opinion between faculty and students? There were five items which were judged by our statistical standards to be the ones about which the greatest disagreement is disclosed. Assuming limited time and resources available for any faculty evaluation project, which is doubtless true, these should be addressed directly and early in the development of the procedures to be followed.

Item 7 relates to the number of classes which should be evaluated. Although most believed each class each semester should be evaluated (40% of the faculty and 63% of the students), the sharpest disagreement occurs with the option of the teacher. There were 30% of the faculty choosing this, while only 4% of the students. Although a clear course to follow is not readily apparent, at least this difference of opinion exists and may be discussed and a compromise developed.

A feature which was missing from the results MSU obtained from IDEA was that of summaries by organizational units. The faculty responses were distributed rather evenly over the four response positions. However, 82% of the students say these summaries would be valuable. We will produce the summaries for these organizational units at the end of our next evaluation period.

A clear difference exists for item 13. Eighty-two percent of the faculty and only 44% of the students believed a better evaluation of a professor's teaching can be obtained *after* the student has been "out in the world" for several years. Our approach here will be to add a feature where alumni will be surveyed. This will be a limited activity and will not materially affect our standard evaluation procedures.

There was disagreement about who should receive the evaluation reports. The students were inclined to favor a more public release of the data where faculty were more in favor of limited distribution. Our compromise solution will have some summaries made public, but the details will be sent only to the instructor. There is one complicating feature. The Office of Institutional Research will keep a complete set of the results of faculty evaluation. These can be reviewed but not removed from the office area. Access to these results can be only obtained after a written request is received by and approved by the director of Institutional Research. In no case will a blanket approval be given. Usually, approval will be given to study the results of a single instructor.

Item 20 is related somewhat to the distribution of results. Eighty-four percent of the faculty disagreed with the opinion that publication of faculty evaluation results was a force in the change of teaching methods. The student response was more in agreement with this statement, but not remarkably so. We are planning a faculty development program where student evaluation of faculty is but one aspect related to professional development. We believe this approach will minimize the coercive atmosphere which faculty evaluation has had associated with it.

At this point we are considering the development of faculty evaluation questionnaires which would be pertinent to sub-units of the university (for example, engineering majors courses or foreign student forms). The data

produced by this study will receive additional analyses which will be designed to provide guidance in these future activities.

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